Venous thromboembolism: recognizing and reducing the risk to inpatients

(See cover story.)

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Do you know what
Dr William Carlos Williams
was thinking about when he wrote:

So much depends
upon

a red wheel
barrow

glazed with rain
water

beside the white
chickens.

Email your answer to:

Jeffrey.Greenwald@bmc.org

Who has your back?

The house staff do a great job on the medical service at BMC admitting and managing many very ill and complicated patients. They are both socially and medically complex. To provide the appropriate care, it takes team effort - and one that does not end when your attending goes home.

Changes in patient status – someone who dies, who is going to the unit, to the OR, or a complicated patient who decides to leave AMA – should be communicated to the attending physician – whether at 2PM or 2 AM. All patients admitted are assigned to an attending, and night floats, covering residents, as well as residents and interns on the team should not hesitate to contact the attending, no matter the hour, to discuss a patient that worries them, or just to review the case to make sure that they have covered all of the appropriate bases. It is helpful to include attending contact information on your sign-out for the covering residents and night floats. *A Jackson*

THE INPATIENT TIMES

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The Inpatient Times

All the news that makes you more fit to treat

Vol 14; April 2006

A publication of the Hospital Medicine Unit and the Department of Medicine

Venous thromboembolism: recognizing and reducing the risk to inpatients

Venous thromboembolism (VTE), which includes DVT and PE, is estimated to cause >250,000 hospitalizations per year and the mortality rate associated with PE can reach 17%. An important consideration is that PE is regarded as the number one preventable cause of death in hospitalized patients, accounting for up to 10% of all inpatient mortality. Thromboprophylaxis with a variety of pharmacologic agents (low molecular weight heparins, unfractionated heparins, fondaparinux, and warfarin) has been shown to reduce the incidence of VTE in patients who are at risk.

Most hospitalized patients have one or more risk factors for VTE. While high-risk groups can be identified, it is not possible to identify prospectively which specific individuals within a group will experience a VTE event. In addition, surveillance programs which identify patients who have sub-clinical VTE are an ineffective method to reduce clinically important VTE events. As such, identification of patients at risk and the implementation of appropriate preventative strategies are the most appropriate strategies for reducing the burden of VTE in the hospital

Despite the recognition of elevated risk, along with the substantial scientific evidence for thromboprophylaxis, a significant improvement in the application of VTE prophylaxis measures is needed. In a prospective registry study of >5000 patients, only 42% of patients who had experienced a DVT had received appropriate prophylaxis within the previous 30 days. Of the patients diagnosed with DVT, 50% were non-surgical. While it has been long recognized that surgical patients have an elevated risk for VTE, these results highlight the fact that a significant proportion events will occur in medical populations.

In light of the risk of VTE in inpatients, the importance of prevention, and the current underutilization of appropriate preventative strategies, the NQF and JCAHO collaborated on a project to standardize performance measures for preventing VTE. Several of these measures addressing the identification of patients at risk and implementation of appropriate thromboprophylaxis may go into effect in 2007.

System-wide measures are being developed to address these proposed core measures, however, physicians must continue to do VTE risk assessment. While it is clearly recognized that the presence of multiple risk factors increases the overall risk for VTE (i.e. risk factors for VTE are additive), there is little data on how each of the risk factors formally interact with each other. As such, the current risk stratification scheme recommended at BMC utilizes a group-specific prophylaxis approach. Patients are classified as having one of four levels of risk for VTE (low, medium, high, highest) depending upon certain characteristics. This risk scheme (as well as pertinent risk factors), along with recommended thromboprophylaxis measures for each level of risk, can be found in the "VTE Prophylaxis and Treatment" medication guideline located on the BMC pharmacy website (http://www.internal.bmc.org/pharmacy/guidelines/guidelines_index.html). Questions regarding the risk stratification scheme or the appropriate use of various anticoagulants for thromboprophylaxis can be directed to Toby Trujillo, Pharm.D. (Pager #1072), clinical pharmacy specialist in cardiology and anticoagulation. *T Trujillo*

NB: Selected references for this article are available on the back of this issue of *The Inpatient Times*

Everything you ever wanted to know about vancomycin (but were afraid to ask)

Vancomycin is one of the most frequently used antibiotics in the hospital. Beta-lactam-resistant gram-positive organisms are now routine causes of both nosocomial and community-acquired infections. For example, nosocomial pneumonias caused by methicillin-resistant *Staphylococcus aureus* (MRSA) or prosthetic device infections, often caused by MRSA or methicillin-resistant *Staphylococcus epidermidis* are increasingly common. In addition, many studies now indicate that the majority of staphylococcal community-acquired skin and soft tissue infections are caused by MRSA. Thus, attempts to limit vancomycin use at hospitals have met with limited success. At BMC, vancomycin is appropriate empiric treatment for patients suspected of having a serious gram-positive infection, particularly with staphylococci. Vancomycin use is not indicated for continued empiric use if cultures do not yield beta-lactam-resistant organisms or for routine prophylaxis for patients on dialysis, with indwelling catheters, or for dosing convenience in patients with renal failure. Remember, if the organism is sensitive to a beta-lactam agent, beta-lactams are the superior antibiotics and are associated with better patient outcomes. Treating patients with a single blood culture positive for coagulase-negative staph with vancomycin is also not appropriate in most cases. Eliminating this practice is an important and easy way to reduce vancomycin use.

Once the clinician opts to use vancomycin, often the next decision is whether to add gentamicin or rifampin for synergy. For serious infections caused by enterococci, if high-level gentamicin resistance is not present, treatment with both vancomycin and gentamicin is indicated. Vancomycin should be combined with gentamicin and rifampin when treating prosthetic-valve endocarditis caused by *S. aureus* or coagulase-negative staphylococci. Vancomycin with rifampin is recommended for prosthetic joint infections. Use of combination therapy in other settings is controversial.

One issue that causes confusion is when to draw vancomycin serum drug levels. Peak serum drug levels are not recommended.

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Vancomycin, unlike aminoglycosides, does not exhibit concentration-dependent killing. The height of the peak concentration is not correlated with outcomes so measurement of peak drug levels is generally not helpful. Vancomycin efficacy is related to time above the minimal inhibitory concentration (MIC) of the bacteria. Trough levels can be used to judge whether the vancomycin is adequately dosed for a particular infection as well as to monitor for toxicity. Vancomycin toxicity is infrequent when used alone but increases significantly when the patient is being treated with another nephrotoxic agent such as gentamicin or cyclosporine. Trough levels may also be useful when treating patients with unstable renal function, treating deep-seated infections (such as osteomyelitis, pneumonia or endocarditis), or treating patients on dialysis, who are obese, or who will be on a prolonged course of therapy (>14 days).

The trough level should be between 15 and 20 mcg/ml when treating pneumonia, meningitis, osteomyelitis, or endovascular infections. For other infections, a trough level of 5 to 15 mcg/ml is considered adequate. A trough level should be drawn approximately one hour before the third vancomycin dose to ensure a steady state drug concentration has been reached.

After a medication-utilization evaluation performed at Boston Medical Center in 2004, it was evident that the use and monitoring of vancomycin at our hospital was not optimal. A prospective pharmacy-based monitoring service was implemented in 2005 to improve vancomycin utilization and monitoring. The Antibiotic Management Team monitors specific patients on vancomycin therapy. Patients are selected based on their expected duration of therapy and indication for treatment. The pharmacist makes recommendations to the primary team on monitoring and dosing. If you have questions about vancomycin treatment of your patient, or believe your patient should be monitored by pharmacy, please contact the Antibiotic Management Team at pager 8523 or see the vancomycin IV guideline at www.internal.bmc.org/pharmacy/ under "medication guidelines."

T Barlam

Establishing Goals of Care

Case scenario:

Mrs. Jones thinks to herself: *"I have to say that I am feeling slightly better today. Yesterday, I felt like this was the end!! I know I had been feeling sick for a few days but last night was horrible. I could not catch my breath. Thank God Jaime came to check on me and called 911. They told me in the ER that I had pneumonia!! I remember that my aunt had pneumonia and died from it. She had to be placed on that horrible breathing machine for days before she passed away at the nursing home. Am I going to need a breathing tube? I am so scared."*

Doctor: *"How are you feeling now Mrs. Jones? You have pneumonia and we have you on IV antibiotics and will discharge you tomorrow if your white count comes down and you do not spike a fever. We will change you to PO antibiotics and then send you to a rehab. Any questions?"*

Mrs. Jones thinks to herself: *"Any questions!! On my God, I am going to die. These doctors are sending me to a nursing home. That's where Aunt Verna went after she had the pneumonia!!! I hope my WHITE COUNT comes down, what ever that means. IV, PO, what are they saying? How did I get pneumonia? Did I get it from my cat? What is going to happen to her if I go to the nursing home?"*

Mrs. Jones is our "average" patient who gets admitted to the hospital. Though the care team is successfully treating her acute illness, no one has engaged her in a discussion about goals of care. Treating the patient is obviously the priority but what comes after that?

The challenge of modern hospital medicine is providing excellent care in the face of high patient volume. For older patients, establishing goals of care early in a hospital admission is essential to providing excellent care. In developing goals of care with patients, we need to determine what they need from us in order to get back to their lives at the same level of functioning, if not better.

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We have to do a better job in not only educating our patients in laymen's terms but also in checking for comprehension. We have to find out from patients what their needs are. We cannot assume that their needs are limited to the medical treatment of their illnesses. In the above scenario, the doctor is congratulating himself for picking the best evidence-based antibiotic for Mrs. Jones' pneumonia. But what about Mrs. Jones' fear of "needing the breathing machine," just as her Aunt Verna did? What about the patient's perception that she is going to the nursing home to die? What about her cat?

For all patients, especially older patients, it is absolutely necessary to establish the goals of care in a multi-disciplinary manner, keeping the patient as an integral part of the team. So:

- Find out early in the admission the patient's baseline function
- Talk to the patient about her social situation
- Let the patient tell you about her concerns
- Inform the patient about her condition and treatment plan in simple terms throughout the hospital course
- Involve the patient, nursing staff, and physical and occupational therapists in formulating an appropriate discharge plan

G Syali

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Did your patient not get a test ordered, get a wrong medication, miss a dose of medication, or have another adverse event while on your service?

Get to the bottom of the system issues that permitted it to occur.

File an incident report.
Click "Incident/Medication Safety" tab at www.internal.bmc.org

It's not blame and shame, it's getting to the bottom of the problem. Help us out.

Interns! Your days are numbered!
Making the transition to resident

"I do the admissions, write the orders, talk to the consultants, call the PCP, and meet with the family, and type the discharge summaries. I even do all the rectal exams! What does the resident do all day?"

The transition to becoming "the resident" is complex and it doesn't happen on that fateful last day of internship when you sign out your pager to the next person foolish enough to have signed the contract to do your current job. It is a process and one that all interns should be thinking about and beginning now.

Think back on the residents you've had this year. The good, the bad, and, well, the ugly. What made them so? Great residents are leaders, role models, teachers, helpers, cheer leaders, supporters, organizers, attending-blockers, admission blockers (ahem…), facilitators, as well hopefully as thinkers, and savvy and more experienced clinicians. Residents have a style, a way, that is their signature; but like signatures, some are messy and uninterpretable and others are clear and legible. Some residents are disorganized, unhelpful, and do not facilitate learning on the team while others helped you develop a clear plan and course, educating you along the way.

You cannot hope that the skills of being a resident will just arrive by FedEx in late June. It takes thought and practice. Here are a few tips to ease that transition.

- Start now. Think about the residents with whom you have worked who you liked and did not like. Mentally catalog their attributes and begin actively to identify ways to include the positive aspects in your style and avoid the negatives. Use all that excess mental energy you used at the beginning of the year just trying to figure out how to be an intern and channel it into learning to be a resident.
- Ask hard questions. Remember, at the beginning of this year, you had to struggle to figure out how to replete potassium and to know which bowel prep to give. Move on. Don't only ask what happened to your patient and how you can fix this problem. Ask why it happened and what

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you can do to prevent it from recurring. Look at the big picture. You are good at treating asthma exacerbations but why did this patient have her 3rd one this year? Can you prevent a 4th? These big picture questions are often the most interesting ones. .

- Read. Now that you don't have to take time to run down to the ED to steal guaiac fluid to do your rectal exams (ahem…), you have a bit more time…and also a lot more responsibility to read so you can answer the why questions and go beyond superficial understanding.
- Teach. Be one of those residents who teaches a little everyday. This doesn't just happen, you have to plan it. Decide: "I'm gonna be one of those residents who spends 5 minutes at the beginning of rounds everyday teaching something. Everyday!" State it as a goal for yourself to your team. Then do it.
- Challenge your colleagues. Do not accept everything you are told as the gospel. Review the primary patient data. Ask for evidence and reasoning. Learning how to think about and approach a problem is every bit as important as understanding the evidence. If you don't understand the reasoning, you cannot help your team apply the evidence appropriately.
- Foster communications. You live in a program of trickle-down communications. The attending rounds with you and then you must pass on the "orders" to your team. Be good about making sure they aren't orders but rather explanations of the decisions. Use the experience as a chance to teach your team and solidify your understanding of the reasoning behind the plans. Keep the lines of dialog in all directions open at all times.
- Look out for your team. You have to be coach, quarterback, and cheerleader. You must devise strategies to keep your team running and learning and, hopefully having some fun.

I hope that this will be food for thought as you make the huge transition from intern to resident. It takes work but there are a lot of people around to support you. It's normal to be nervous. Focus that nervous energy on inspiring you to be a truly great resident.

J Greenwald

Changing heart failure to heart success

Heart failure is a growing cardiovascular epidemic. As baby boomers age and more and more patients survive their myocardial infarctions, the number of patients with heart failure is increasing. There are now a million heart failure hospitalizations annually in the United States, and the prevalence of heart failure will double in your working lifetime. Nor is this a benign condition – heart failure has an overall mortality risk greater than that of many major malignancies.

Despite these grim statistics, there are encouraging signs that we are making progress in our battle against heart failure. Just three decades ago, our sole weapons were diuretics and digoxin. Now we have a whole armamentarium at our disposal, ranging from beta-blockers to biventricular pacemakers. We no longer even require the failing heart to beat to sustain life – we can implant a ventricular assist device or a total artificial heart, and in principle maintain effective circulation for an indefinite period. These advances have come at a cost: the price tag for heart failure now exceeds $29 billion dollars a year in the United States, more than the gross national product of at least 84 countries. Our challenge is not to deliver the best technology that money can buy, but to deliver effective health care that minimizes the number of people that need this technology.

So how best can we deliver on the holy grail of cost effective heart failure management? The basic tenets of care still hold – improve your patient's quality of life and keep them alive to reap the benefits. This goal can be achieved by simply implementing well-established, evidence-based, best practices in heart failure care as laid out in the recent American Heart Association/American College of Cardiology and European Society of Cardiology guidelines circ.ahajournals.org/cgi/content/full/112/12/e154 and eurheartj.oxfordjournals.org/cgi/content/full/26/4/384.

The lion's share of heart failure spending is

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on hospitalizations, an obvious target for improving care while reducing cost. An efficient, organized approach to the hospitalized patient with heart failure is all that is required to turn your patient around quickly in most cases. Immediate symptom relief can be achieved by optimizing your patient's fluid status and control of hypertension. The presence of jugular venous distension is your single most useful clinical tool for assessing cardiac filling pressures – assess it daily. Monitor the response to diuretics – check diuresis 4-6 hours after initiating treatment or increasing the dose, rather than once a day on rounds. The failing heart is exquisitely sensitive to small changes in afterload; afterload, and therefore intracardiac filling pressures, may be significantly elevated with modest degrees of hypertension or even normotension. Controlling hypertension and reducing afterload alone will usually make a patient feel better.

Virtually all patients with systolic heart failure should be on adequate doses of an ACE inhibitor or angiotensin receptor blocker and a beta-blocker – treatments proven to slow progression of disease and improve survival. Judicious use of second line agents, digoxin, aldosterone receptor antagonists and hydralazine/nitrate combinations can further improve symptoms and outcomes. Preparation for discharge is crucial – a rushed discharge with the wrong prescriptions and inadequate follow-up arrangements will undo all your good work. Heart failure clinical order sets , like ACS, CAP, and Chest Pain, are available on SCM. These order sets are designed to facilitate care, encourage compliance with JCAHO requirements and best of all – will save you work. Use them whenever possible. Remember, you can start them even after the initial admission if the admitting team forgot to do so.

A career in heart failure has everything to offer the young physician – an expanding patient population, new drugs, cutting-edge technology, innovative surgical options, and jobs. Like using your hands? The development of a hybrid heart failure physician – with device implantation skills – has been proposed, to offer you the best of all worlds. We're getting there.

H Ooi

Hyperglycemia during enteral feeding

Patients managed with enteral (i.e. oral or tube feed) nutrition are often hyperglycemic in the hospital, and are at risk for persistent hyperglycemia especially when feeding is continuous. This occurs even in patients who were previously normoglycemic. Although there have not been studies to address the exact mechanisms, it is probable that continuous nutrition places a unique demand on pancreatic beta cells in patients with underlying beta cell dysfunction and/or insulin resistance. As a result, many patients require insulin therapy while receiving enteral feeds.

The most effective and flexible regimen is continuous intravenous insulin per a hospital-specific guideline. These guidelines or protocols are currently only available in the intensive care unit. Intravenous insulin is titrated while a patient is receiving continuous feeding, and therefore incorporates all three components of insulin therapy into one intervention: basal, nutritional and correction. However, when an insulin infusion is not available/feasible, regimens using scheduled subcutaneous insulin injections can be very effective.

Tube feeding should not be started until appropriate adjustments have been made in the insulin dose(s) to bring the blood glucose under control. Likewise, if glucose control deteriorates during enteral feeding, the tube feeding rate should not be advanced until the glucose level is again within goal range. As is always the case in treating hyperglycemia in the hospitalized patients, patients on tube feeds should receive a combination of basal and nutritional insulin. One way to do this is to administer an effective basal insulin regimen with glargine before tube feeds advance. The basal insulin requirement can be calculate using the patient's weight. The average inpatient requires between 0.2u/kg and 0.4u/kg per day of basal insulin, either given as glargine once daily or NPH split q 6 or q12 hours. When dosed correctly, basal insulins should not cause hypoglycemia when continuous calories are unexpectedly interrupted.

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Basal insulins should not be held when nutrition is stopped (which often happens), although NPH can be reduced by 1/3 or 1/2. All adjustments made as the rate is advanced should be made using a short-acting insulin regimen. Titrating the short-acting nutritional insulin, rather than the basal insulin, minimizes the risk of hypoglycemia that could result from a long-acting insulin preparation following unexpected discontinuation of tube feeding. Nurses can easily be instructed to hold the "standing" nutritional insulin when tube feeds are stopped. Regimens using NPH mixed with regular insulin given together every 6 hours, have been well described for use when tube feedings are administered continuously over 24 hours. I find that this regimen is often highly effective, especially for patients with significant insulin resistance who require > 60 units of insulin /day to reach control on continuous tube feeding.

Nocturnal enteral feedings require additional coordination on the part of the physician and nursing staff. Observational evidence indicates that NPH offers the best glycemic control in nocturnal enteral feedings; however, because the peak action of NPH is delayed if it is administered when enteral feedings are initiated, short-acting insulin must be added at the start of tube feeds to cover the carbohydrate exposure during the first several hours. Dosing is determined by frequent monitoring of blood glucose (every 2 to 3 hours the first few nights).

Which short-acting insulin (lispro vs. regular) is best to use for patients receiving enteral feeds? In general, lispro should be reserved for patients on *bolus* feedings, whereas regular insulin every 6 hours is more appropriate for continuously fed patients.

M McDonnell

Have questions about managing your diabetic patient?

Page: GLUC (4582)

Plight of the night float: Ownership vs. shift work

"No one died overnight." Ever gotten that somewhat sarcastic sign-out from the night float? Pretty low bar, eh? How often have you had to repeat the night float history because the H&P form was scantily completed or just wrong. Why does this happen? These are our own residents; we can't blame this one on another department. We own this.

Ever since the 80 hour work week has become the national standard – arguably a very good advance for house officer training, but not without its down side – night float systems have become quite common around the country. Yet, few programs have licked the problems inherent in the first paragraph.

We all know that certain residents under certain circumstances will do a great job on night float: take full responsibility for owning the initiation of the evaluation and treatment of the patient, document their thinking in the notes, and even follow-up the next day to find out what has happened to "their" patient. Other residents under other circumstances will not do this, seeing their primary responsibility to get the patient safely through the night so the day team can do the real evaluation.

No one argues that when night float is being deluged with admissions, cross-cover, and medical consults that there is a lot of time to put into lengthy dissertations on the differential diagnoses of their admissions. This is a systems issue that will need to be addressed by the hospital, Department of Medicine, and residency office.

But there is still that human variability noted above. What makes some residents on night float outperform others. I would argue it's all about ownership.

How many times have you stayed at a hotel and made a mess and not cared? You don't mind if the housekeeper cleans up after you then next day. But at home, is it the same with messes when you know your parents or significant other are coming over? You home (even if you rent) is about ownership. It's yours, part of your identity.

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Let's not kid ourselves. Night float generally is a drag. You admit all night; you miss all the conferences (read: free food), and all your friends are sleeping when you want to go have fun. It's not easy. But for that brief period, you must own the nights as your colleagues own the days. Make the patients yours. Remember, it is the least directly supervised experience you will have. Take advantage of the autonomy to develop your medical reasoning skills. Here are a few tips to help you with this:

- Take pride in your work. Give clear and thoughtful presentations in the morning to the team receiving your patients. Remember, these H&Ps reflect your work ethic. Look at it as an opportunity for you to give the team a "totally packaged" patient as you might want if you were on the receiving end of a new bolus of patients. Consider yourself a part of every team to which you admit.
- Ask for follow-up on your patients when you get sign-out the next night. Find out what happened.
- Read about interesting cases you see while on night float. This will keep the learning alive in real time.
- Ask for feedback on challenging cases from the attendings who accepted them. Feedback is the best way to identify room for improvement in your reasoning and medical skills.
- Ask for help. Yes, I mean at 3 in the morning! If you are stuck or confused by a patient, call the accepting attending. That is why our pagers are on 24/7. Please use them. We are medically responsible for the patients from the minute they are assigned to us so let us know if there are questions we may be able to help with.

Being a good night float resident is challenging. Developing a sense of ownership for the patients you admit will help you strive to perform the best you can while others tackle the significant system problems.

J Greenwald

Ask and you shall receive:
RESCUE Clinical Skills

At a recent focus group discussion, several residents stated that not enough time was spent on bedside clinical teaching by attending physicians. They also questioned the assumption that residents had completed their learning of clinical skills and did not need any more teaching on this subject. The group had many suggestions on inclusion of regular, systematic physical exam teaching for junior and senior residents. As a result of this discussion, we engaged in an experiment substituting some inpatient morning reports for bedside physical exam morning reports. These sessions consisted not only of patient exam but also a discussion of the meaning and significance of the findings as well as tips and tricks to elicitation of findings. These sessions were very well received by participating residents and they clamored for more.

Hence we are pleased to inform our residents that bedside morning reports focusing on physical exam are to become an integral part of resident clinical teaching starting July, 2007. We have coined an appropriate eponym for this curriculum, "RESCUE CS"- RESident CUrriculum for Excellence in Clinical Skills, henceforth to be referred to as RESCUE. An enthusiastic RESCUE team of faculty will be teaching these morning reports. The teaching will be targeted towards an advanced level of learners and sessions will be resident only morning reports. More details of this curriculum will follow shortly.

I enclose some quotes from our residents and thank them for pushing us to expand our teaching horizons:

"The demise of the physical exam is a self-fulfilling prophecy being advanced by those lacking confidence in their physical exam skills. The role of physical exam is as important today as it was at the time of William Osler and directs clinical judgment and investigations. To avoid cheating the present day students and residents of valuable skills and to ensure good patient care, the teaching of physical exam skills needs to obtain greater importance."

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"I used to merely go through the motions of the cardiac exam, being pleased with myself when I detected a slight murmur. Rarely did this ever lead to a concrete diagnosis, likely due to a combination of insufficient practice and inadequate training. Now I evaluate the JVP on every patient, palpate for PA taps and RV heaves, and differentiate between high and low pitched heart sounds – later using this constellation of findings to accurately diagnose cardiac pathology. All it took was an attending well-versed in the art of physical diagnosis and bedside teaching, and an enthusiastic intern thirsting to improve. But as I was always told by my high school basketball coach, "practice doesn't make perfect, but perfect practice does." Going through the motions of the physical exam, if done incorrectly, can be a complete waste of one's time. Good bedside teaching can help tease out these intricacies and elevate an adequate resident to excellence."

"In terms of teaching and potential weakness at BU / BMC—physical exam, I think. We have a couple of classes as students and then when we get to be interns there's a certain expectation that we automatically learn, our physical exams have miraculously gotten better, but that's something that can always be improved even as senior residents and onward but we really don't get that much physical exam teaching."

You asked and you shall receive.

S Ramani

The Inpatient Times encourages all readers to submit articles for consideration to Jeff Greenwald

Jeffrey.Greenwald@bmc.org

Direct observation of trainees

The ABIM and other organizations rely on teaching faculty and residency programs to assess the knowledge, skills, attitudes, and values of students and residents, particularly those that cannot be tested adequately by a written examination. Attending physicians have many opportunities during daily work to observe and evaluate the performance of trainees. Bedside teaching and direct observation of patient-trainee interactions are key in assessing trainees' competence. The use of multiple observations by several attendings can enhance the reliability, validity and quality of trainee assessment, particularly in the following areas:

1. Confirm and augment key historical facts and physical findings elicited
2. Assess trainee understanding and synthesis through case presentations and discussions
3. Evaluate demonstration of appropriate interpersonal skills, clinical reasoning, decision-making and diagnostic abilities
4. Assess professional behaviors of respect, compassion, integrity during interactions with patients, physician and non-physician colleagues.
5. Evaluate ability of trainees to identify deficiencies in their own performance and respond to feedback.

Feedback:

Both verbal and written feedback are fundamental to the continuing professional growth of residents and students. During and at the end of all rotations, attendings should give trainees a critical appraisal of their clinical competence reinforcing their strengths and identifying areas for improvement.

Direct observation cards (DOC):

DOCs can facilitate timely feedback to the residency program. These forms are designed to fit conveniently in coat pockets. These cards will help to comprehensively assess trainees at regular intervals and translate that information onto evaluation forms. All attendings on the inpatient rotations are expected to complete

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these cards, provide substantive comments, and return this information to the program office.

Competencies to be observed:

- History taking
- Physical exam
- Physician-Patient communication

Logistics:

- Inpatient attendings including units are requested to complete DOCs: 1-2 observations/ trainee/ward block. This includes interns and residents. Students will be added to shortly.
- DOCs will be handed out during inpatient orientation meetings or at section meetings.
- Attendings will hand back cards to the Program Directors at end of block meetings or Maria DeOliveira in the Residency Program Office.
- Observations are not meant to add to the workload of attendings or trainees. They should occur in context of daily patient care. Exercises should be brief; 5-10 minutes and can be snapshots of single or multiple interactions.

Next steps:

1. Over the next several months, specifically trained faculty will join ward attendings for 10-15 minutes during morning rounds, complete DOCs along with the attending, and have a short debriefing session. This will provide one on one skills practice.
2. Starting July 2006, workshops will be organized for ward attendings to discuss and practice inpatient teaching skills.

Reminder:

- This is NOT another evaluation form; in fact there are no rating scales. Multiple observations will provide comprehensive feedback to trainees who can monitor their progress longitudinally.
- This is NOT added work for attendings. It is documentation of what is already being done.

We encourage all ward and unit attendings to complete trainee observations during their inpatient blocks. We also hope that housestaff and students will remind their attendings that DOCs need to be completed. If you have any questions or need clarification, please contact Subha Ramani at sramani@bu.edu.

S Ramani

Telephone:
a game for children, not clinicians

Remember playing the game "telephone" as a child? A message is given to the first person in the group who whispers it to the next person. By the time it reaches the last person, it is often is quite different than the original message. In medicine, handoffs occur frequently: from nurse-to-nurse, from physician-to-physician, and during transitions of care. Handoffs involve the transfer of role and responsibility from one person to another in a physical or mental process[1] and often involve transfers of information. When information is passed from person to person, it may become diluted or changed.

We are all familiar with the Institute of Medicine data which state that 44,000 to 98, 000 patients die in U.S. hospitals annually because of preventable medical errors.[1] This makes medical errors the eighth most common cause of death. Breakdowns in communications are an important contributor to these errors. A sentinel event is an unexpected incident related to a systems deficiency which leads to death or major loss of function. Failures in communication between healthcare personnel account for over 60% of root causes of sentinel events.[2] An Australian study involving 28 hospitals reviewed the cause of adverse events and found that communication errors were the leading cause, associated with twice as many deaths as was clinical inadequacy.[3]

The airline industry has long studied the critical issue of handoffs and has collected data about safety and interpersonal interactions.[3] Members of air traffic control and crew members practice and are observed employing skills needed for effective handoffs. In medicine, very little has been studied and often our handoffs or sign-outs consist of an email or an illegible scrap of paper. The very few studies which have examined the handoff process in medicine confirm that it is variable, unstructured, and prone to error.[4]

In any effort to reduce duty hours for medical trainees, many handoffs are involved. In our own Internal Medicine residency, we can see this in the form of night float coverage, night float and day

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float admissions and weekend coverage. Thus the quality and safety of the "sign out" gains even more importance. In one of the few studies of "sign outs" in academic hospitals, Arora et el studied the "sign-out" of inpatient care at the University of Chicago. Using a survey developed to study aviation accidents, 30 interns were interviewed after a night of cross cover to solicit information on communication failures during verbal and written sign out. 25 distinct adverse events were reported, all of which were the result of communication failure in written or verbal sign-out. The major communication failures could be placed into two categories. The first included content omissions such as failure to report an active medical problem. The second communication failure had to do with the process itself. Often the interns cited lack of face-to-face communication as a factor in a critical incident

Anecdotally, I am sure we can all think of an incident where a more effective sign-out would have lead to better care or at least a more efficient workup. Interestingly, we never receive formal training on communication or effective handoff. In fact, one survey revealed that only 8% of medical schools teach how to handoff patients in a formal didactic session.[3] Our "hand-me-down" process of learning handoffs may not be ideal considering the critical clinical implications of lack of proper communication. In other high stakes fields such as the airline industry or the military, a standardized form of communication is ingrained into the culture. In part II of this article (see opposite page), some elements for successful handoffs will be reviewed. *N Radhakrishnan*

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Handoffs: would we win the Heisman?

"*Gentleman, it is better to have died as a small boy than to fumble this football*"

-John Heisman (1869-1936) American football coach for whom the Heisman trophy is named.

Handoffs, or transitions in care, are particularly vulnerable times in which the propensity for medical errors increases. One of the Joint Commission National Patient safety goals is to implement a standardized approach to "handoff" communications.

Sign-outs from one doctor to another can create huge gaps. In fact, a study at Brigham and Women's showed that being covered, principally at night, by a different physician, was a far better predictor of hospital complications and errors than was the severity of the patient's illness.[1] So what are some ways to improve communications to create a precise handoff and thus improve the safety and care of our patients? While physician-to-physician handoffs have been minimally studied, one conclusion is certain. *The safest method of transferring responsibility for a patient is the face-to-face handoff.* This means that the off going physician talks directly with the on duty physician. While computerized medical records can facilitate this face-to-face interaction, crucial factors are lost when the handoff is done over the phone or email. Written handoffs often have either too little information or too much data and misplaced salience.

With the various on-call teams and cross-coverage it becomes difficult to find the time or venue to have a face-to-face exchange. However, when we consider the data that we have on medical errors, we see the importance of the precise hand-off. Think of the extra time it takes make up for a poor sign-out by "starting from scratch" with a patient. The face-to-face handoff is the preferred method of communication in terms of patient handoffs.

Assuming we have the face-to-face communication, the physical environment is

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also very important. Often, we are handing our sign-out to the cross-cover intern who is trying to do an admission while her pager is going off and while her teammates are reminding her to check Mr. Patient's CBC. Surely, in this type of exchange, critical data and transfer of information will be lost. Another example of a venue where data can be lost is the multiple signouts to multiple teams in the conference room at 7 AM. Handoffs need to take place with minimal interruption or distraction.

Another key method to improve hand offs is standardization. For example, in the military, voice communication involves use of the phonetic alphabet. This substitutes a word for a letter, such as Alpha for "A", Bravo for "B". This clarifies the spelling without wasting time thinking of words that have a common reference.[1] In "medicalese" while we do have some common terms that we relate to, some of the medical slang can have different meanings to different people or vary by institution. For example, does a "dirty urine" mean the sample was not a clean catch or that the patient has a UTI? A standardized communication format and terminology can reduce medical errors. The following methods can help to create precise hand-offs:[2]

- Limit distractions and interruptions
- Provide handoff in the same order every time with standardized terminology
- Provide clear transfer of responsibility
- Provide opportunity for two-way interaction and opportunity to ask questions
- Focus on critical patient care and treatment plans with a contingency plan for "what ifs"

Here at BMC, we are examining ways to improve the handoff process and are working to implement a hospital-wide policy to standardize and facilitate precise handoffs. In this way, instead of following another John Heisman quote "*When in doubt, punt,*" we are avoiding fumbles and providing exceptional patient care. *N Radhakrishnan*

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